

*Note on the Nebula surrounding Eta Argûs.* By H. O. Russell,  
Government Astronomer at the Sydney Observatory.

In Mr. Lassell's "Remarks on the supposed Change in the Great Nebula near  $\eta$  Argûs" there is one passage near the foot of p. 253 about which I have a few words of explanation to give.

The passage runs, "It is much to be regretted that Mr. Russell did not accompany his letter by a copy, more or less elaborate, of the drawing and stars he has so carefully laid down," &c.

On the 24th March, 1871, I sent to Sir John Herschel *four copies* of my drawing of the nebula in question, together with measures of the stars and notes of observation; also a statement of the dimensions and quality of the Sydney refractor. *On the 13th of May following* I wrote another letter to Sir John Herschel, enclosing a copy of the report which has got into Mr. Lassell's hands: that letter refers to information previously sent, and I can only regret that the drawings of the nebula there referred to were not put into Mr. Lassell's hands with the newspaper report.

December 29, 1871.

### *Measures of Binary Star $\xi$ Ursæ Majoris.*

By George Knott, Esq.

I have obtained during the past two months the following three sets of measures of the interesting binary star  $\xi$  *Ursæ Majoris*, now near perihelion:—

P = 31° 60,	obs. 6,	w. 35;	D = 1° 092,	obs. 6.	w. 30;	Epoch 1872° 028
29° 69,	5,	29	1° 111,	4,	24	1872° 088
28° 15,	5,	36	1° 052,	4,	24	1872° 138

The measures were taken with my  $7\frac{1}{3}$ -inch Alvan Clark refractor and a parallel wire micrometer; magnifying powers 450 and 515.

Woodcroft Observatory, Cuckfield, Sussex,  
March 7, 1872.

### *Longitude of Teheran.* By Lieut.-Col. J. T. Walker.

In September last an approximate value of the longitude of Teheran, which was required for the correction of the maps of Persia, was determined by Col. Walker, R.E., Superintendent of the Trigonometrical Survey of India, and Major St. John, R.E., of the Persian Telegraph Department, through the line of the Indo-

European Telegraph Company. The Directors of that Company had kindly granted the free use of the line for the purpose, and every assistance was most obligingly rendered by the Messrs. Siemens, who supervise all the arrangements for keeping the line in working order.

Signals were sent from London by Col. Walker, and from Teheran by Major St. John, the Greenwich times of the signals being ascertained from a clock in the Government Central Telegraph Office, which was governed by a clock in the Greenwich Observatory, while the Teheran times were determined by sextant observations taken on the spot by Major St. John, and his assistant, Capt. Pierson, R.E.

Considerable interest attaches to the operations from the circumstance that though the distance from London to Teheran, along the telegraph line, is nearly 4000 miles,\* and it was necessary to employ automatic relays at five intermediate stations, the entire retardation of the electric current in either direction was found to average less than half a second. This shows that the line is in a very high state of efficiency, which is most creditable to the Messrs. Siemens, by whom all the working arrangements are carried out. Thus there is much reason to hope that, when the necessary instruments are available in India, exact and final determinations of the differences of longitude of the Greenwich and the Madras Observatories, and the stations on the arcs of parallel of the Indian Survey, may be obtained without any serious difficulty.

The value now determined for the longitude of Teheran is  $51^{\circ} 24' 56''$  east of Greenwich. It differs by less than half a minute, or say half a mile, from the value which had been previously deduced by Major St. John by combining a telegraphic determination of the difference between Teheran and Kurrachee, which was made by himself and his assistants, with the trigonometrical difference between Kurrachee and the Madras Observatory, which is furnished by the operations of the great Trigonometrical Survey of India, and assuming for the Madras Observatory the latest and most exact value of longitude,  $80^{\circ} 14' 20''$  east of Greenwich, which has been adopted by the Government astronomer at Madras, and is quoted in all the recent nautical almanacs. This close coincidence between two independent results, though possibly to some extent fortuitous, may be accepted as

* Linden to Emden	..	..	..	390 miles.
Emden to Berlin	..	..	..	330
Berlin to Gitomis	..	..	..	850
Gitomis to Kertch	..	..	..	800
Kertch to Tiflis	..	..	..	700
Tiflis to Teheran	..	..	..	800
Total	..	..	..	3870 miles.

a sufficient proof that there can be no very material error in the adopted value for the Madras Observatory, and this is a matter of some importance, as all the most important determinations of longitude in India have invariably been referred differentially to that observatory.

*Note on Colour as affected by Variation of Optical Power.*

By Lt.-Col. A. Strange, F.R.S.

At one of the meetings of the Society last year, in a discussion on the changes of colour that had been observed at distant intervals in some of the planets, I stated my doubt whether the same observer at different epochs would be able to compare his impressions of colour satisfactorily. My belief is that of the three elements, form—size—colour, the last is that which is least permanently fixed, in most cases, in the sensorial memory.

A recent, perfectly unpremeditated, experiment bears upon the general question of estimating or distinguishing colour, though not upon the above particular branch of it. I was, within the last few days, at a theatre with two young ladies. They drew my attention to “the lady opposite in *pink*.” Turning my glass to her, I replied, “You mean the lady in *yellow*.” “No,” replied both, “her dress is pink.” Having ascertained that we all spoke of the same person, I begged my companions to use their glasses. On doing so they both at once admitted the colour to be yellow, as I had said. But they assured me that to their naked eye it was pink as before.

One of the young ladies, my own daughter, is considered to have a remarkably fine eye for colour, with the faculty of matching and remembering tints very strongly developed. The other, also a near relative, is likewise an excellent judge of colour, and a born artist. The dress about which the above doubt arose was not all coloured. It was white, with a great deal of the doubtfully-coloured trimming, and the tint (whatever it really may have been) was *very pale*. There was strong light upon it, and the distance was that of the whole greatest diameter of a small theatre.

Such are the facts, on which I do not propose to theorise. But they certainly point at least to one practical consideration—namely, the influence of optical power on colour impressions, and the necessity of great caution in pressing observations on the colour of heavenly bodies into the service of speculations regarding cosmical changes.

Since the above was written I have read Mr. Lassell’s interesting paper on the planet *Jupiter* (*Monthly Notices* for January 1872), in which is the following passage,—“I may add further, that the variety of colour is most obvious with the higher powers, and when the atmosphere will not permit their use the tints are scarcely apparent.”